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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

AUGHENBAUGH, WALTER

ART UNIT

PAPER NUMBER

1772

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4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/084,573	Applicant(s) AMINE ET AL.	
	Examiner Walter B Aughenbaugh	Art Unit 1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 20-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-19, drawn to a laminate, classified in class 428, subclass 622.
- II. Claims 20-31, drawn to a laminate comprising an absorbent material pattern, classified in class 428, subclass 411.1.
- III. Claims 32-34, drawn to a housing, classified in class 428, subclass 35.2.

2. Inventions II and I are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as a laminate without a metal layer and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

3. Inventions I and III are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate

Art Unit: 1772

product is deemed to be useful as a laminate sheet and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

4. Inventions II and III are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as a laminate sheet and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

5. During a telephone conversation with Joe Meara on behalf of Mark A. Kassel on February 3, 2003 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-19. Affirmation of this election must be made by applicant in replying to this

Art Unit: 1772

Office action. Claims 20-34 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

7. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to claim 1, the term "substantially" (third line of claim) prevents the scope of claim from being ascertained. What is "substantially inert"?

Art Unit: 1772

In further regard to claim 1, the recitation that "the sealant layer is capable of acting as a barrier to an electrolyte" renders the claim indefinite because the scope of the property intended to be recited by this phrase cannot be ascertained.

Claim 8 recites the limitation "moisture barrier layer" in the second line of the claim.

There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness:

12. Claims 1-5 and 7-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaloner-Gill in view of Kurfman.

Chaloner-Gill teach a laminate for protecting components of an electrochemical cell such as a lithium battery (col. 1, lines 49-53). Chaloner-Gill teach that the laminate protects from attack and/or passivation from electrolytes and moist air (col. 1, lines 17-19), and therefore the sealant layer is capable of acting as a barrier to an electrolyte and is substantially inert to the

Art Unit: 1772

electrolyte. Note that it has been held that the recitation that an element is "capable of" performing a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Chaloner-Gill teach that the laminate comprises outer protective layer (item 40), adhesive layer (item 50), metal foil layer (item 44) and sealant layer (item 36) (col. 4, line 63-col. 5, line 43 and Figure 5).

In regard to claim 1, Chaloner-Gill fail to teach that the laminate comprises first and second metal layers, where the metal layers are adjacent to each other. Kurfman, however, discloses a metal/metal/polymer laminate having two metal layers intimately adhered to each other (col. 2, lines 25-28). Kurfman discloses that the laminate exhibits excellent barrier to moisture transmission (col. 1, lines 54-62). Therefore, one of ordinary skill in the art would have recognized to have inserted a second metal layer between the metal layer (item 44) and sealant layer (item 36) or between the metal layer (item 44) and the adhesive layer (item 50) of Chaloner-Gill in order to improve the barrier to moisture transmission as taught by Kurfman.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have inserted a second metal layer between the metal layer (item 44) and sealant layer (item 36) or between the metal layer (item 44) and the adhesive layer (item 50) of Chaloner-Gill in order to improve the barrier to moisture transmission as taught by Kurfman.

In regard to claim 2, Chaloner-Gill fail to teach that the laminate comprises first and second metal layers further comprising a layer of adhesive material between at least one pair of layers selected from the first and second layers of metal foil and the sealant layer and the first layer of metal foil. However, Kurfman disclose that an adhesive layer is used to bond the

Art Unit: 1772

polymer layer of Kurfman to one of the metal layers of Kurfman (col. 12, lines 30-35).

Therefore, one of ordinary skill in the art would have recognized to have bonded the polymeric sealant layer of the laminate taught by Chaloner-Gill and Kurfman to the first metal layer taught by Chaloner-Gill and Kurfman since it is notoriously well known to bond a polymeric layer to a metal layer via a suitable adhesive layer as taught by Kurfman.

In regard to claim 3, Chaloner-Gill teach that the metal foil is aluminum foil (col. 5, line 5).

In regard to claim 4, Chaloner-Gill teach that each of the layers in the laminate is on the order of about 20-30 micrometers (col. 9, lines 40-43). One of ordinary skill in the art would have recognized to have formed the first and second metal layers taught by Chaloner-Gill and Kurfman such that the thicknesses of both the metal layers were 20-30 micrometers since Chaloner-Gill teach that 20-30 micrometers is a suitable thickness for the each of the layers in a laminate for protecting components of an electrochemical cell.

In regard to claims 5 and 7, Chaloner-Gill teach that the sealant layer is an ethylene-acrylic copolymer (col. 5, lines 44-46), which is an ethylene interpolymers (equivalently, an ethylene copolymer).

In regard to claim 8, Chaloner-Gill teach that the protective layer (item 40) is disposed adjacent to the external surface of the metal moisture barrier layer (item 44) via an adhesive layer (item 50) (col. 4, line 63-col. 5, line 43 and Figure 5).

In regard to claims 9-11, Chaloner-Gill teach that the protective layer is desirably a polyester or polyamide, and preferably polyethylene terephthalate or nylon (col. 4, line 63-col. 5, line 1).

In regard to claims 12-17, Chaloner-Gill teach the combination of oxygen scavengers with various oxygen absorbers such as activated clay and activated alumina (col. 7, line 62-col. 8, line 68) and water absorbing agents such as water absorbent resins, calcium sulfate and silica gel (col. 9, lines 1-33). Chaloner-Gill teach that the oxygen absorbers and water absorbing agents are incorporated in one of the sealant layer, adhesive layer or protective layer along with the oxygen scavenger or are disposed of between layers of the laminate (col. 9, line 62-col. 10, line 15 and col. 10, lines 23-39 in claims 1 and 4-6; and col. 8, lines 49-68).

13. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chaloner-Gill in view of Kurfman, and in further view of Sasaki et al.

Chaloner-Gill and Kurfman teach the laminate as discussed above. Chaloner-Gill and Kurfman fail to teach that the sealant layer is selected from the group consisting of polyesters, polyamides, polyvinylchlorides, fluoroplastics and polyolefins. Sasaki et al., however, disclose that the material for use as the sealant layer (item 19) in a sealing container of a lithium-ion secondary cell is limited to polyolefin materials containing no base such as polyethylene and polypropylene in the case where the secondary cell of gel electrolyte is made of polyacrylonitrile (col. 9, lines 51-59 and Figures 6A and B). Therefore, one of ordinary skill in the art would have recognized to have used a polyolefin material containing no base as the sealant layer in a sealing container of a lithium-ion secondary cell since it is notoriously well known that use of a polyolefin material containing no base is essential in the case where the secondary cell of gel electrolyte is made of polyacrylonitrile as taught by Sasaki et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a polyolefin material containing no base as the sealant layer in a sealing

Art Unit: 1772

container of a lithium-ion secondary cell since it is notoriously well known that use of a polyolefin material containing no base is essential in the case where the secondary cell of gel electrolyte is made of polyacrylonitrile as taught by Sasaki et al.

14. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaloner-Gill in view of Kurfman, and in further view of Shores.

Chaloner-Gill and Kurfman teach the laminate as discussed above. Chaloner-Gill and Kurfman teach the combination of oxygen scavengers with various oxygen absorbers such as activated clay and activated alumina (col. 7, line 62-col. 8, line 68) and water absorbing agents such as water absorbent resins, calcium sulfate and silica gel (col. 9, lines 1-33). Chaloner-Gill teach that the oxygen absorbers and water absorbing agents are incorporated in one of the sealant layer, adhesive layer or protective layer along with the oxygen scavenger or are disposed of between layers of the laminate (col. 9, line 62-col. 10, line 15 and col. 10, lines 23-39 in claims 1 and 4-6; and col. 8, lines 49-68). Note that the method of forming the absorbent layer is not germane to the issue of patentability of the laminate itself. Therefore, this limitation has not been given patentable weight (in regard to the method of forming the absorbent layer, i.e. coating). Chaloner-Gill and Kurfman fail to explicitly teach that the absorbent material is coated onto the internal surface of the sealant layer. Shores, however, discloses a coating having an water vapor absorbent material (dessicant, protonated alumino silicate) that is coated onto the interior surface of a package for packaging an electronic device (col. 1, lines 24-29 and col. 3, lines 13-25 and 8, lines 23-43). Therefore, one of ordinary skill in the art would have recognized to have applied an additional polymeric layer containing the oxygen absorbers and water absorbing agents of Chaloner-Gill to the internal surface of the sealant layer of the laminate of

Art Unit: 1772

Chaloner-Gill and Kurfman in order to absorb water vapor from the interior environment of a package formed from the laminate of Chaloner-Gill and Kurfman as taught by Shores.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have applied an additional polymeric layer containing the oxygen absorbers and water absorbing agents of Chaloner-Gill to the internal surface of the sealant layer of the laminate of Chaloner-Gill and Kurfman in order to absorb water vapor from the interior environment of a package formed from the laminate of Chaloner-Gill and Kurfman as taught by Shores.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. 4,407,897 to Farrell et al..

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B Aughenbaugh whose telephone number is 703-305-4511. The examiner can normally be reached on Monday-Friday from 9:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on 703-308-4251. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

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